

**Abstract**

The invention relates to a lead substitute material for radiation protection purposes, wherein the lead substitute material comprises from 12 to 22 wt.% silicone-based matrix material, from 1 to 75 wt.% Sn or Sn compounds, from 0 to 73 wt.% W or W compounds, from 0 to 80 wt.% Bi or Bi compounds, for nominal overall lead equivalents of from 0.25 to 2.00 mm. The invention relates further to a lead substitute material that additionally comprises one or more of the elements Er, Ho, Dy, Tb, Gd, Eu, Sm, Ta, Hf, Lu, Yb, Tm, Th, U and/or their compounds and/or CsI.